

U.S. Department of Energy
Office of Environment, Safety and Health

**EH TECHNICAL ASSISTANCE PLAN
FOR
OAK RIDGE RESERVATION**

ENHANCED WORK PLANNING PROGRAM

REVISION LOG

CHANGE/ REVISION	EFFECTIVE DATE	SUMMARY

APPLICABLE EH OFFICES: ALL

TITLE	SIGNATURE	DATE
LMES S&H Director	<i>David Milan</i>	
Deputy Manager, FMO, Y-12	<i>Ray Smith</i>	
Manager, Maintenance, K-25	<i>Lou Tanner</i>	
Maintenance Manager, DOE OR	<i>David Queen</i>	
EH/HQ Coordinator Technical Assistance Program	<i>Michael Hillman</i>	
Director EH Mentoring Programs	<i>Michael Hillman</i>	
Director Office of Field Support, EH	<i>Robert Barber</i>	

PRELIMINARY DRAFT

EH TECHNICAL ASSISTANCE PLAN
for
ENHANCED WORK PLANNING
at
OAK RIDGE

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SUBMITTED TO:

Ray Smith
Deputy Manager
Facilities Maintenance Organization, Y-12 Plant
Lockheed Martin Energy Systems
P.O. Box 2009
Oak Ridge, Tennessee 37831-8042

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EH TECHNICAL ASSISTANCE PLAN
for
ENHANCED WORK PLANNING AT OAK RIDGE

1.0 INTRODUCTION: EH TECHNICAL ASSISTANCE PROGRAM

The charter of the EH Onsite Technical Assistance Team, comprising experts from DOE's Office of Environment, Safety and Health (EH), represents an innovative approach in which EH mentors work with contractors and DOE representatives at a site to develop and implement practical solutions to the site's priority concerns.

Rather than assuming an oversight role, EH mentors come to the site to provide dedicated, hands-on assistance under the overall direction of their customers. Mentors facilitate the resolution of problems in a spirit of cooperation between the site and DOE Headquarters. Often, their assistance is provided by drawing on lessons learned and innovative approaches successfully used by other sites throughout the DOE complex; however, it is recognized that each site is unique in terms of which solutions work best, and EH mentors can help the site develop its own innovative, tailored solutions.

2.0 BACKGROUND

Over the last 3 years, the EH Onsite Technical Assistance Program has helped launch Enhanced Work Planning (EWP) demonstrations at DOE sites throughout the Complex (including Oak Ridge). Fundamental EWP tenets include (1) use of a multidisciplinary approach to planning (including workers), (2) adoption of a graded, risk-based approach to work control, (3) effective use of meaningful performance measures and feedback mechanisms to advance project goals, and (4) use of continuous improvement programs to effect positive results in the midst of changing site priorities and resources. In the relatively short time since its beginnings, EWP has been acknowledged as an effective mechanism for advancing Defense Nuclear Facilities Safety Board (DNFSB) goals of integrated safety management. In addition, EWP programs have proven themselves a valuable means to integrate and enhance site management and work control programs and allow critical missions to be accomplished faster, better, safer, and cheaper.

Where sites already have ongoing programs to improve work control processes, EH's EWP initiative has worked well to incorporate or complement these efforts or both, bringing an added reservoir of approaches and proven work products to the site. The EWP program has also served as a means for a site to showcase its successes for the rest of the Complex.

After helping Headquarters develop and pilot the EWP program through applying, refining, and expanding it in real field situations, EH mentors are now available to help other DOE field sites to

broaden the program. To date, EH mentors have helped sites apply EWP principles to a wide variety of technical and managerial challenges. Focuses of their EWP efforts include—

- o Reengineering and strategic integration (e.g., shifting from dedicated to matrixed resources, modifying management structures).
- o Maintenance (e.g., streamlining work package preparation/approval and applying a risk-based, graded approach).
- o Waste management (including waste minimization).
- o Site privatization initiatives.
- o Occupational safety and health (including projects specializing in medical surveillance/medical monitoring).
- o Development and use of computerized tools.

Beginning in the fourth quarter 1996, the Oak Ridge Reservation has joined 10 other DOE sites around the Complex by engaging in the DOE–EH EWP program. Building on successful EWP pilot demonstrations throughout the DOE complex, including one within the K–25 Site’s Waste Programs Division, Oak Ridge has launched an expanded program with participants from the Y–12 Plant, the East Tennessee Technology Park, and Oak Ridge National Laboratory (ORNL).

Currently, a Core Oak Ridge EWP team and several subcommittees have been established for the EWP program. Participants include multidisciplinary representatives from groups such as engineering, operations, maintenance, information systems, waste management, and safety and health. With the onsite support of the EH Technical Assistance Program, which coordinates complexwide EWP initiatives and helps bring them to Oak Ridge, activities are being conducted with the participation of LMES, LMER, and DOE–ORO.

The objectives to accomplish during the expansion of the EWP program at Oak Ridge, as identified in Figure 1, have been developed through the efforts of the existing EWP Core Team.

3.0 PURPOSE

The purpose of this Technical Assistance Plan is to—

- o Solicit Oak Ridge funding (\$120,000) for EH mentor involvement in future activities of the site’s Enhanced Work Planning program;

- o Solicit Oak Ridge funding (\$30,000) for the development of three EWP training courses;
- o Conceptualize key objectives of Oak Ridge's program and future EWP activities; and
- o Summarize the role of the EH mentors.

The funding amounts solicited for mentor involvement will supplement an additional, comparable level of funding to be provided by DOE Headquarters. Similarly, funding solicited for the development of EWP training courses will supplement similar contributions being provided by other DOE sites around the Complex.

Once executed by the designated site and EH personnel, this plan will secure the involvement of EH mentors at the site consistent with funding for the activities proposed here. It is anticipated that this plan will be supplemented and refined as additional details are worked out (how the EWP program will be carried out, the specific enhancements to be made, the performance measures to be adopted, and the like).

4.0 SCOPE AND PLANNED ACTIVITIES

EH mentors from around the complex will support Lockheed Martin Energy Systems and site DOE representatives in the conduct of an EWP program. Oak Ridge EWP subcommittees (already established) will be supported, as shown in Figure 1 and Figure 2.

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FIGURE 1: OVERALL EWP OBJECTIVES AT OAK RIDGE

- o Support the integration of the East Tennessee Technology Park (ETTP) and Y-12 work control processes such that a consistent, enhanced work control system is developed that incorporates the best elements of both sites.
- o Support the integration of environmental, safety, and health programs between Y-12 and ETTP by focusing on the enhancement and automation of the ES&H permitting process.
- o Enhance how skill-of-the-craft and graded-approach concepts are implemented through the institutionalization of a streamlined work control approach embodying fundamental EWP tenets (multidisciplinary planning, craft involvement, up-front participation by safety and health organizations, and the like).
- o Pilot enhanced work control and ES&H processes during critical upcoming activities dealing with the 9212 Resumption effort or another suitable project to be selected by the EWP Core Team.
- o Export successful strategies, automated systems, and other work products being developed through the Oak Ridge EWP efforts to ORNL and other Environmental Management Enrichment Facilities, including those at Portsmouth and Paducah.
- o Enhance communications and mutual assistance endeavors between Oak Ridge and DOE Headquarters as well as other EWP sites throughout the complex.

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FIGURE 2: OBJECTIVES OF OAK RIDGE EWP SUBCOMMITTEES

Automated Planning and Permitting Subcommittee

- o Develop an automated, streamlined system that provides an effective way to identify which permits and controls apply to work being planned. Incorporate permits and forms dealing with safety, industrial hygiene, radiation control, environmental protection, and engineering as well as Work Smart Standards checklists used by project managers to help determine the regulations, DOE Orders, and special facility requirements that are considered necessary and sufficient for the work at hand.
- o Work with Skill-of-the-Craft Subcommittee to develop an automated system that defensibly identifies the level of rigor to which job packages must be prepared (i.e., routine vs. skill-of-the-craft vs. planned) and incorporates automated job hazard analysis.
- o Develop an automated system that electronically assembles planning packages and attaches necessary permit descriptions for eventual computerized routing, approval, and feedback.

Skill-of-the-Craft Subcommittee

- o Integrate the best work control processes of both Y-12 and ETTP sites and enhance them such that a consistent, streamlined, defensible, graded planning approach is developed with special focus on the less rigorous maintenance jobs (which constitute most work packages).
- o Collaborate with the Automated Planning and Permitting Subcommittee to develop an automated means for planners to apply the work planning and control processes developed.
- o Pilot the enhanced work planning/control processes within the Y-12 9212 restart initiative or other appropriate activities.
- o Ultimately, refine and export the enhanced processes, as appropriate, throughout the Oak Ridge Reservation and also to EMEF facilities at Portsmouth and Paducah.

Integration of EWP with Complementary Initiatives Subcommittee

- o Link EWP efforts to complementary initiatives being undertaken at the site. Such initiatives include—

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- Integrated Safety Management (per DNFSB 95–2 recommendations);
- LMES Safe Work Control Program, SH–120PD (per draft program description document of 2/11/97);
- Voluntary Protection Program (OSHA);
- Work Smart Standards initiative (Environmental Management Enrichment Facilities); and
- Oak Ridge’s application for the Energy Quality (Malcolm Baldrige) Award.

Performance Measures Subcommittee

- o Enhance the benefit and use of work control performance measures (work delay codes, electronic manager alerts) by managers and supervisors through means such as refining and supplementing existing metrics systems, providing training, and using automated systems.
- o Assist the other EWP subcommittees in setting up and using fair and meaningful systems to help measure their success in accomplishing the objectives they have established.
- o Overall, monitor and provide feedback on how well the Oak Ridge EWP program meets its objectives.

EWP Training Subcommittee

- o Participate in the DOE–EH coordinated effort to develop three EWP training courses and associated video tapes (see 5.0, below).
- o Help shape the general courses for maximum usefulness for Oak Ridge Operations.
- o Help tailor the courses to Oak Ridge-specific needs (i.e., to serve as a mechanism for advancing ORO integrated safety management goals and LMES Safe Work Controls Program).
- o Participate in train-the-trainer sessions at Oak Ridge.
- o Develop and implement an Oak Ridge EWP training program for appropriate personnel.

5.0 EWP TRAINING COURSES

DOE Headquarters is coordinating an initiative to prepare Enhanced Work Planning training courses for complexwide use. A proposal for the following three training courses has been put together by Lockheed Martin Idaho Technologies Company (LMITCO).

- o EWP Fundamentals (1 hour)
- o Establishing EWP (6–8 hours)
- o EWP Team Training (4–6 hours)

Courses will be based in part on the ideas solicited at the February 1997 EWP team leaders meeting in Augusta. LMITCO's proposal includes professional quality training materials, video tapes, training guides, and train-the-trainer courses. (LMITCO's proposal and training program design specifications are available on request.)

Although a significant portion of the funding required has already been committed by Headquarters and INEEL, Headquarters is asking that key EWP sites also contribute funds. In particular, DOE–EH is seeking a contribution from Oak Ridge of \$30k for this initiative.

By providing the \$30,000 funding for this effort, Oak Ridge will realize the following benefits—

- o Oak Ridge can use the courses as a means to help implement it's action plans relating to DNFSB 95–2 recommendations.
- o Oak Ridge can use the courses to help implement guidance found in the draft LMES Safe Work Controls Program.
- o Oak Ridge can help shape the content of the training courses and maximize their usefulness as a means to meet Oak Ridge objectives.
- o The progress of Oak Ridge's startup EWP program will be made easier.
- o Oak Ridge will be further established as a key player within the complex's EWP program and will receive the benefits stemming from coordinating with DOE Headquarters personnel and other EWP sites.

6.0 ADDITIONAL MENTORING SUPPORT FOR OAK RIDGE

As appropriate, the Onsite Technical Assistance Program will provide additional assistance to the site in areas such as maintenance and work control, ES&H consultation, planning, demonstrations, program development, training, testing, and field trials.

7.0 DELIVERABLES

Deliverables for this task include—

- o Documentation relative to how this demonstration project is being planned and conducted (e.g., approach to accomplishing project objectives, meeting agendas, milestone charts).
- o Reports related to baselining and the demonstration trials.
- o Progress reports as required by DOE and Lockheed Martin personnel.
- o Training classes developed per Section 5.0, above.

The time lines for these deliverables will be specified by Lockheed Martin's Vice President for Safety and Health.

8.0 SCHEDULE

Mentor support for this program is anticipated to require an average of one and one-half FTE senior-level EWP/occupational safety and health specialists for approximately 6 months. Support will primarily be onsite (i.e., about 75%). The remaining 25% offsite support time will be spent by the mentors interfacing and coordinating with DOE Headquarters and other sites.

The anticipated project schedule is as follows:

Start date:	_____
Solidify project teams and develop detailed project plans:	_____
Work on issues and develop enhancements:	_____
Test and refine enhancements:	_____
Reporting phase:	_____
Completion date:	_____

9.0 LEVEL OF EFFORT/FUNDING

9.1 Funding for EH Onsite Technical Assistance Program Team Members

EH Onsite Technical Assistance Program team members (mentors) will support Oak Ridge in this effort. One lead mentor, skilled in the areas of occupational safety and health, work management, and the DOE Enhanced Work Planning program, will provide the most onsite support for the duration of the initiative. As appropriate, this lead mentor will be assisted by other technical assistance team members representing necessary technical disciplines (e.g., computer programming, schedule development, training, maintenance and work controls, management consulting).

The effort is intended to last 6 months. For budgeting purposes, a cost estimate is provided based on an FTE being \$20,000/month, inclusive of labor and travel.

FUNDING REQUIRED BY SITE FOR EH MENTORS: \$120,000

9.2 Funding for EH EWP Training Initiative

Per Section 5.0, above, a funding level of \$30,000 is requested.

FUNDING REQUIRED BY SITE FOR EH MENTORS: \$30,000

9.3 Total Funding Request

THE TOTAL FUNDING TO BE PROVIDED BY OAK RIDGE IS \$150,000.

This funding will secure funding by DOE Headquarters of approximately \$_____ to enable support from additional EH Technical Assistance Team members and to extend the period of performance for this initiative beyond the 6-month period.

10.0 CUSTOMER SATISFACTION CRITERIA

The successful completion of these mentoring activities can be measured objectively by customer survey responses to the following criteria.

- o The EWP initiative is conducted in a manner that meets mutually agreed-to objectives and approaches as defined in this Technical Assistance Plan and its supplements.
- o With mentor assistance, improvements to the work planning and work control process are identified and successfully implemented that contribute to meeting performance goals and objectives.

- o Increased proficiency is developed in first-line supervisors and shift managers, enhancing work efficiency and productivity.
- o Better coordination of resources and disciplines is achieved, leading to improved efficiency, productivity, and safety.
- o Work scheduling is improved and the effectiveness in implementing the schedule in the field is enhanced.
- o Documentation of the work planning demonstration process is complete and accurate and assembled in a manner that would facilitate possible export of information to other DOE sites.

11.0 FOLLOWUP ACTIVITIES

To be determined.

12.0 APPROVALS AND ENDORSEMENTS

The signers of this technical assistance plan endorse the Enhanced Work Planning Program as described here.

MORE ABOUT THE DOE EWP PROGRAM

The Enhanced Work Planning (EWP) program has been shown to be an effective tool for advancing goals of productivity, efficiency, and safety within the complex and rapidly changing DOE environment. The EWP program has a proven track record as a way to bring about needed organizational changes through proven management tenets, including multidisciplinary participation in work control and continuous improvement initiatives, upfront worker involvement in planning, and a graded and risk-based approach to controlling hazards. At sites where EWP programs have been launched, the payback has been dramatic—millions of dollars saved, streamlined work control processes, and critical technical and management issues addressed with buy-in from unions, contractors, and DOE.

The EWP program has proven adaptable to many sites and organizational departments, each with specific challenges and technical missions. It has been used to enhance how work is done in areas such as maintenance programs, environmental restoration, occupational safety and health, medical surveillance, waste minimization, and information management. It has been brought to bear on all aspects of work control from identification of work through work permitting, planning, scheduling/coordination, and execution. In addition, it has shown its benefit as a mechanism for “working out the bugs” often associated with reengineering, downsizing, and strategic integration. EWP programs are being effectively dovetailed by sites into other key quality initiatives such as the OSHA Voluntary Protection Program, Malcolm Baldrige Award application, and ISO certification.

With EWP, DOE Headquarters has assumed a valued and indispensable role. Through its partnership with the sites, DOE-EH is coordinating EWP efforts across the country at over a dozen major sites. Headquarters is facilitating the program by providing technical know-how, seed money, and experienced EWP “mentors” who remain on site to help get the program started. Headquarters has helped the sites communicate among themselves and transfer lessons learned and the many EWP work products that have been developed around the Complex. Headquarters has indeed made the whole of the EWP program much greater than the sum of its parts.

In summary, DOE’s Enhanced Work Planning initiative has proven itself a valuable tool for helping DOE accomplish its mission faster, better, safer, and cheaper. Its worth is illustrated by enthusiastic endorsements by participants as varied as site contractors, labor representatives, and DOE officials at all levels.

Refinement/Testing of WPPIS at K-25 and Y-12

The Work Permit Planning Information System (WPPIS), currently being developed by Oak Ridge through earlier EWP efforts, shows great promise as a tool for enhancing planning at Oak Ridge and helping fulfill objectives specified in the LMES draft Safe Work Controls Program (SH-120PD). The tool advances fundamental EWP goals such as use of a team approach to planning, incorporation of requirements in a graded, risk-based, defensible manner, and ready access by managers, supervisors, and workers to comprehensive job information and lessons learned.

Already, the program streamlines the planning process by incorporating such features as with mentor assistance—

- o Electronic routing and approval.
- o On-screen identification and explanation of required permits.
- o Electronic documentation of the planning process.

Per this Technical Assistance Plan, EWP initiatives will include the overall objectives of (1) building on the WPPIS system to maximize its benefit to the site (in accordance with EWP tenets and the expressed needs of its users) and (2) facilitating the actual testing and use of the system at ETTP and Y-12. The use of WPPIS and buy-in by both ETTP and Y-12 can also advance sitewide goals of strategic integration of certain key functions such as maintenance.

Conceptually, key focuses of this initiative include—

- o Formation of an EWP Core Team of potential users and benefactors of the system so as to optimize its features and facilitate its integration into conduct of work processes at Oak Ridge.
- o Development of necessary policies and procedures such that the WPPIS tool advances desirable, well thought-out, documented planning principles and EWP tenets.
- o Consideration of computerized tools developed at other EWP sites to determine whether/how WPPIS should be linked to them (or otherwise refined/supplemented to incorporate other features). Computerized tools to be considered include the Fernald Automated Work Package and medical linkages software, the Hanford Job Hazard Analysis and Employee Job Task Analysis software; and the INEEL Job Requirements Checklist.
- o Consideration of existing software systems already in use at Oak Ridge and how WPPIS can be linked to or supplement them (e.g., existing maintenance work package software at Oak Ridge, site safety and health databases, site accounting systems.)
- o Incorporation of the Oak Ridge Safety Work Permit into WPPIS.
- o Assistance programmers in refining/supplementing WPPIS.
- o Testing and refinement of the system by using it in pilot projects (e.g., perform training, implementation, evaluation).

Reengineering/Integration of the Safety and Health Staff at K-25 and Y-12

(TBD)

Enhancement/Integration of Y-12 and ETP Maintenance Programs

The primary goal of the demonstration is to examine how work planning concepts to be tested can advance worker protection while enhancing the efficiency, quality, and productivity of those involved in operations and maintenance. It is anticipated that the work planning enhancements will supplement existing Fernald D&D planning practices.

Using elements of Oak Ridge's existing work planning process as a foundation, EH mentors will focus on the following efforts—

- o Support the formation of an EWP Core Team of potential users and benefactors of the system so as to optimize its features and facilitate its integration into conduct of work processes at Oak Ridge.
- o Provide onsite assistance in developing a detailed plan for carrying out this demonstration project.
- o Facilitate communication and interaction among FERMCO, the Fernald Area Office, the Ohio Field Office, EM, and EH to ensure the formulation of a program that is of maximum practical benefit and fully accepted by all interested parties.
- o Document a baseline of the existing work planning process and compare/validate this system with respect to effective maintenance and work control practices and good ES&H practices.
- o Assist in the identification and documentation of potential enhanced planning practices that can be used to supplement existing planning mechanisms in one or more demonstration projects.
- o Assist in the selection of one or more work projects to be carried out by FERMCO's Remediation Support Operations into which the enhanced planning elements will be incorporated.
- o Facilitate the incorporation of the EWP elements into the selected FERMCO projects.
- o Assist in the development of performance indicators to be used to assess the effectiveness of the identified work planning enhancements in the demonstration project(s) and, following the demonstrations, assist in the objective evaluation of the benefits of the enhancements, as compared to the baseline.

- o Document implementation strategies and lessons learned for future initiatives at other DOE sites.